

Preliminary outcome data for deep inspiratory breath hold guided stereotactic radiotherapy (SBRT) with robotic couch correction for early stage non small cell lung cancers (NSCLC).

Trinanjan Basu 1, Manas R Senapati, Jeevi Priyadarshni, Ratheesh G Nair, Upasna Saxena, Sriram Rajurkar.

1: Consultant Radiation Oncologist, HCG Cancer Centre, Mumbai, India.

Contact: trinanjan.doctor@gmail.com

elcc
European Lung
Cancer Congress
Onsite and Online Congress

PRAGUE CZECH REPUBLIC
30 MARCH - 2 APRIL 2022



PURPOSE / OBJECTIVE(s)

1. To evaluate preliminary clinical outcome for early stage NSCLC treated by SBRT.
2. Early stage: cT1-2N0M0 AJCC 8th edition.
3. SBRT platform: Linear accelerator based with ABC-DIBH and robotic couch correction.
4. Single institute prospective database.

MATERIAL & METHODS

N=20.

Analysis period: 3.5 years (Jan 2018-July 2021).

Baseline PETCT scan, Pulmonary function test (PFT), Biopsy with lung molecular panel markers.

Joint clinic discussion- inoperable in v/o multiple comorbidities, poor cardiac function.

Median age: 60 years.

DIBH training and planning scan (free + DIBH).

SBRT contouring RTOG protocol (Peripheral + central).

Dose prescription:

Central: 50-56 Gy/5-7 fractions.

Peripheral: 48 Gy/4 fractions.

Treatment: alternate days.

Pre-intra treatment CBCT with Hexapod couch correction.

FU: every 3 months with PETCT and PFT.

Toxicity and QOL scoring.

CONTOURING/DOSE EVALUATION PROTOCOL

Central lung: RTOG 0813 protocol.

Peripheral lung: RTOG 0915 protocol.

Lung dose evaluation indices and Chest wall toxicity evaluation.

ESTRO-ACROP contouring protocol.

Constraints	RTOG 0236 60 Gy / 3 Fx	RTOG 0813 50 – 60 Gy / 5 Fx	RTOG 0915 34 – 48 Gy / 1 – 4 Fx	RPCII-124407 30 – 60 Gy / 1 – 3 Fx
Lung V20	10 %	10 %	10 %	10 %
Lung V12.5		1500 cc		
Lung V13.5		1000 cc		
Lung V7			1500 cc	1500 cc
Lung V7.4			1000 cc	1000 cc
Spinal Cord Max	18 Gy	30 Gy	14 / 26 Gy	14 / 18 Gy
Spinal Cord V13.5		0.5 cc		
Spinal Cord V7			1.2 cc	1.2 cc

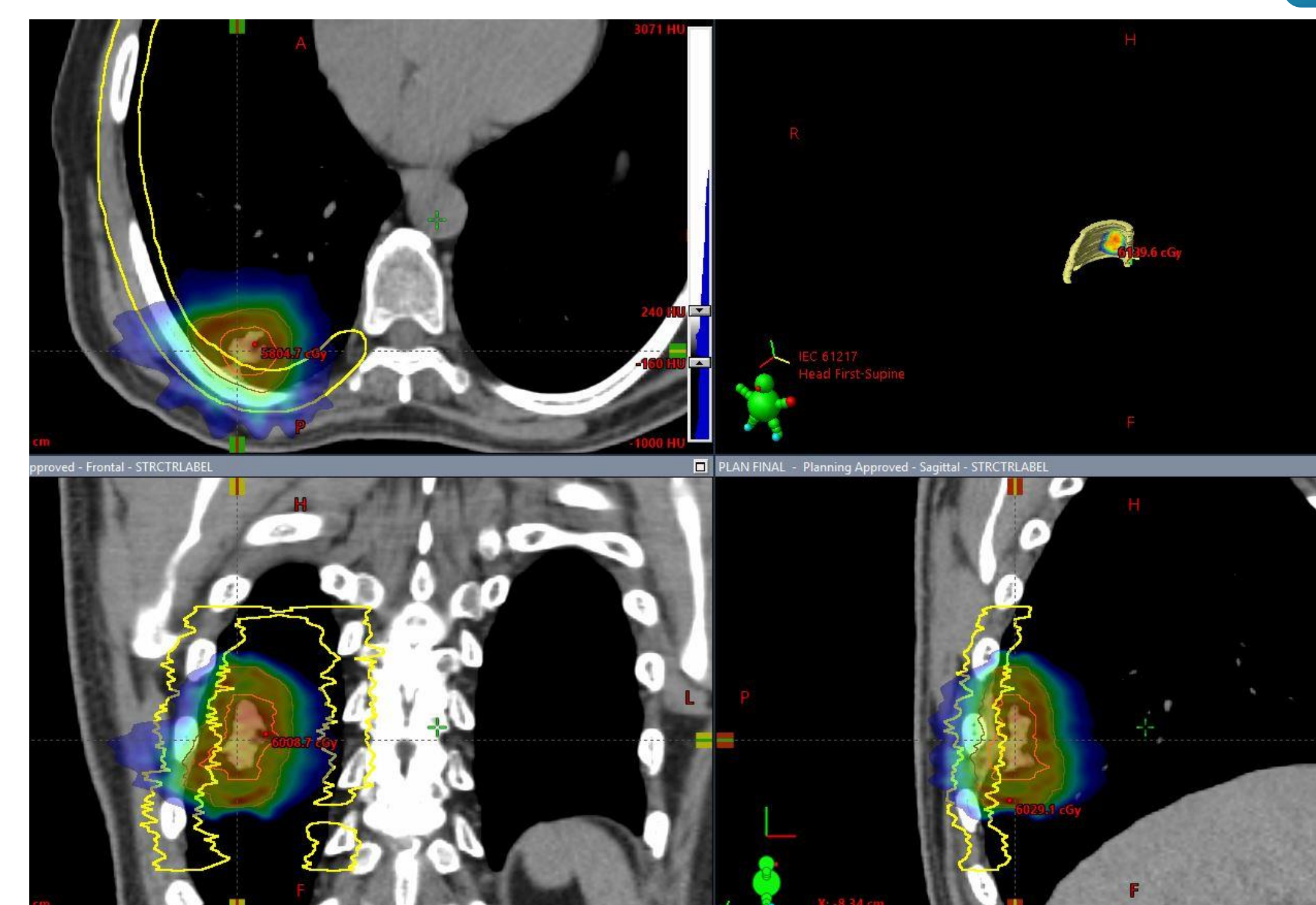
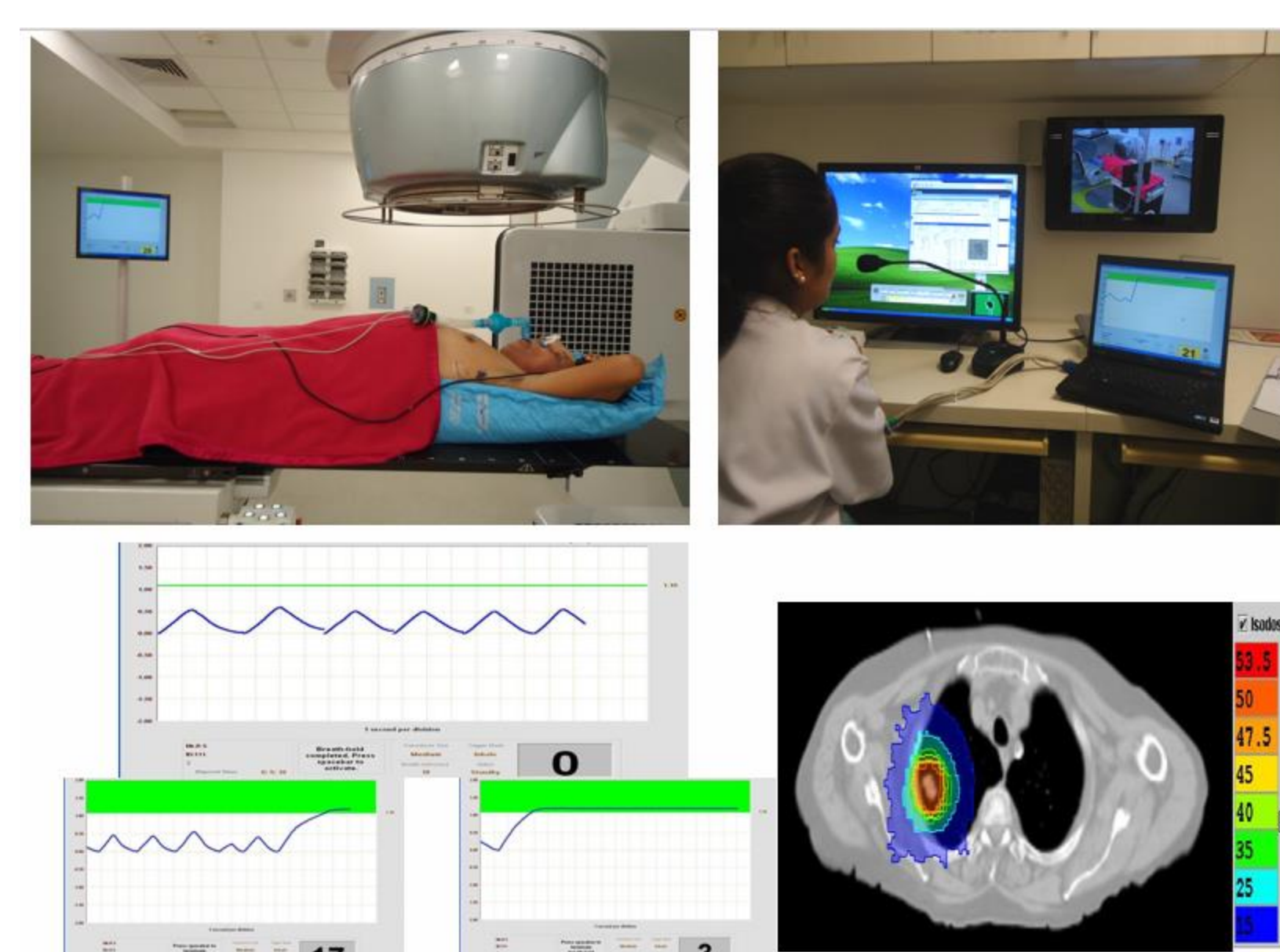
SUMMARY / CONCLUSION

ABC-DIBH based lung SBRT- feasible, safe, effective.

Concerns: Longer treatment duration / Squamous histology / T2 tumors.

Long term database.

PLANNING IMAGES



RESULTS

Median FU: 2 years.

Local control: 90%. Regional control: 80% (2 patients mediastinal nodal failure).

DM: in 6 cases (T2 predominant).

Acute AE: Grade 1-2 fatigue / Pneumonitis / Chest wall toxicity.

Median treatment time for ABC-DIBH: 40 mins.

Median MU delivered: 4200.

Systemic chemo/Immuno: in 5 cases. (Specially in Squamous histology).

POST SBRT PETCT

